

## DESCRIPTIONS OF NEW INTERNAL PARASITES

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Among the collections made by Dr. Alexander Wetmore, while a member of the U. S. S. *Tanager* Expedition of 1923 under the joint auspices of the Biological Survey, United States Department of Agriculture, and the Bishop Museum of Honolulu, were two lots of nematodes and one of cestodes, representing as many species. Both of the nematode species proved to be new to science and are herewith described. According to Doctor Wetmore, all of the monk seals (*Monachus schauinslandii*) which were examined for parasites had nematoda in abundance within the stomach. Owing to the exigencies of the situation, it was difficult to preserve parasitic material and only samples were obtained. He also says that, so far as his memory serves, the wall of the stomach of a parasitized animal did not show ulcers. This condition indicates that there may be a division of the genus *Contracaecum* into ulcer-forming and nonulcer-forming species just as there is in the genus *Heterakis*.

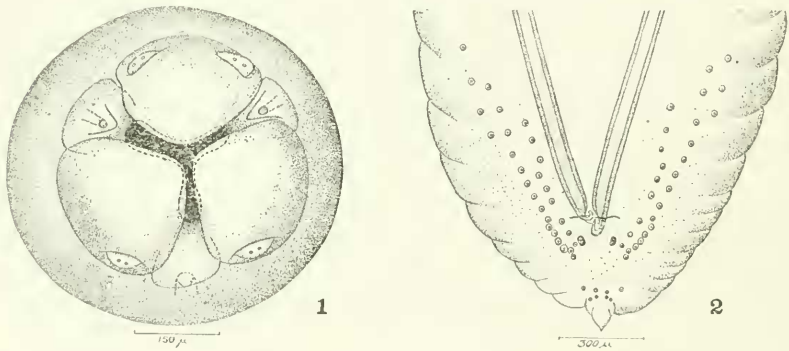
### NEMATODA FAMILY ASCARIDAE

#### CONTRACAECUM TURGIDUM, new species

Male: Length 45 mm., greatest diameter 1.8 mm., near the middle of the body length. Lips large and nearly quadrate, subequal,  $210\mu$  high. Dorsal lip bears two double papillae, each subventral lip with a single double papilla. Interlabia comparatively large; those adjacent to the dorsal lip carry the amphids which appear in transverse section as circular spaces. Excretory pore opens at the base of the ventral interlabium;  $75\mu$  behind the base of the lips is a rather deep constriction, causing the anterior portion of the neck region to assume a collarlike form. Cervical papillae oval, slightly prominent,  $47\mu$  behind the cervical constriction. Esophagus 6.3 mm. long. Intestinal appendix six-elevenths as long as esophagus, esophageal ap-

pendix one-third as long as esophagus. Cloaca  $390\mu$  before posterior extremity of worm, which bears a conical appendage  $120\mu$  long. The usual pair of double papillae are situated  $100\mu$  behind the cloaca and are separated by an interval of  $85\mu$ . Outside the double papillae and extending some distance before and behind the cloaca is, on each side of the worm, a group of twenty-seven papillae. Of these ten are behind the transverse level of the cloaca. Just before the caudal appendage there is a median group of eight papillae, arranged in two rows of four each. Extending forward from each lateral group of papillae is a row of about twenty papillae, the last member of which is about ten millimeters in front of the cloaca. The spicules are very long; the right measures 12 mm., the left 11.8 mm.

Female: Length 62 mm., greatest diameter 2.8 mm., near middle of body length. Lips similar in form and arrangement to those of the male, lips  $150\mu$  high, interlabia slightly less. Labial papillae as



FIGS. 1-2.—*CONTRACAECUM TURGIDUM*. 1, FRONT VIEW OF HEAD. 2, CAUDAL EXTREMITY OF MALE

in male. Amphids and excretory pore as in male. Cervical constriction  $105\mu$  behind base of lips. Esophagus 6 mm. long, relative lengths of the appendices as in male. Vulva near anterior third of body length, vagina short, oviduct thick and muscular, about 2 mm. long, bifurcating to form two voluminous, thin walled uteri both of which are directed posteriad. Anus  $800\mu$  before the posterior extremity. Tail conical, rapidly narrowing to the caudal spike which is  $15\mu$  in length. Eggs spherical to ovate, averaging  $60\mu$  by  $54\mu$ , with smooth thick shells.

*Habitat.*—In stomach of *Monachus schauinslandii*, April 8, 1923, Alex. Wetmore.

*Locality.*—Hawaii, Laysan Island.

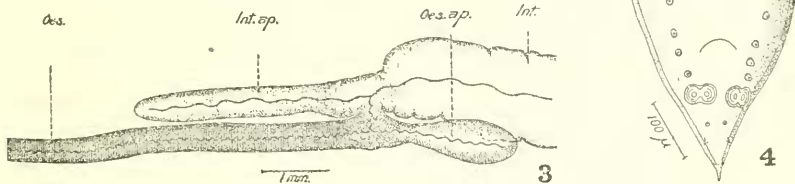
*Type.*—U. S. N. M. Helminthological Collection No. 26202, Paratypes No. 26203, and in the collections of the Bishop Museum.

It may be noted that in the above-described species, as well as in all other species of this genus that the writer has examined, the

interlabia carry certain definite organs. The submedian dorsal interlabia contain the amphids which according to Steiner are sense organs of the olfactory or gustatory type. The ventral interlabium supports in its lower part the terminal portion of the excretory duct. It may be that these interlabia are modified papillae.

CONTRACAEUM MAGNIPAPILLATUM, new species

Male: Length 20 mm., greatest diameter  $585\mu$ , near middle of body length. Lips subequal, each broader across base than high, height  $75\mu$ . Interlabia slightly less high, subtriangular. Labial papillae as in *C. turgidum*. Amphids in interlabia adjacent to dorsal lip, excretory pore near base of ventral interlabium. Cervical constriction  $75\mu$  behind base of lips. Cervical papillae  $645\mu$  behind base of lips, oval, slightly prominent. Esophagus 3.2 mm. long, esophageal appendix three-fourteenths, intestinal appendix three-fourths as long as esophagus, respectively. Cloaca about  $200\mu$  before the posterior extremity, which ends in an acutely conical tip  $13\mu$  long. Double papillae proportionately very large, the boss upon which either pair



FIGS. 3-4.—3, CONTRACAEUM TURGIDUM. ANTERIOR PORTION OF DIGESTIVE TRACT, SHOWING ESOPHAGEAL AND INTESTINAL APPENDAGES. 4, CONTRACAEUM MAGNIPAPILLATUM. CAUDAL EXTREMITY OF MALE

is placed measures  $43\mu$  by  $23\mu$ . The two bosses are separated by a distance equal to the shorter diameter of either. The interval between the cloaca and one of the double papillae is  $26\mu$ . Behind the double papillae there are four single papillae, two of which are submedian, the other pair sublateral and slightly more prominent. Proceeding forward from each double papillae is a single row of twenty-one single papillae, the last member of which is about 4 mm. in front of the cloaca. The spicules are equal and similar, 3.8 mm. long, tips acute, not modified as in *C. turgidum*.

Female: Length 23 mm., greatest width  $750\mu$ , just behind the vulva. Anterior portion similar to that of male. Esophagus 3.37 mm. long, ratios of length of esophagus to that of appendices virtually the same as in the male. Vulva on a slight prominence, 8 mm. behind the anterior extremity, or about the anterior third of the body length. Vagina short ( $120\mu$ ) and straight, opening into a muscular and somewhat sinuous oviduct about 2 mm. long. Oviduct bifurcates to

form two posteriorly directed uteri. Anus  $300\mu$  before the posterior extremity, which is conical with a terminal spike  $10\mu$  long. Eggs oval,  $68\mu$  by  $45\mu$ , with thin shells.

*Habitat*.—In *Megalopterus hawaiiensis*, organ not stated, May 17, 1923, Alex. Wetmore.

*Locality*.—Hawaii, Lisianski Island.

*Type*.—U. S. N. M. Helminthological Collections No. 26204; paratypes No. 25454, and in the collections of the Bishop Museum.

In comparing the two species described above, the dissimilarity in the distribution of the caudal papillae of the males is at once evident. So far as the writer is aware, the arrangement as seen in *C. magnipapillatum* is entirely different from any other species, while that of *C. turgidum* is quite typical. Material representing five species, including the above, has been examined and reference has been made to the remainder of the described species. The eggs of these two species are also conspicuously different in the character of the shell. It may be that when other species of *Contracaecum* have been recovered from other species of terns, a new genus, or at least a subgenus, will be indicated.

## CESTODA

### Family BOTHRIOCEPHALIDAE

#### BOTHRIOCEPHALUS, species

Two specimens of a species of *Bothriocephalus* close to and possibly identical with *B. hians* (Diesing) were collected from *Monachus schauinslandii* April 8, 1923, by Doctor Wetmore. The author does not feel that differentiation of the species in this genus should be undertaken without the expenditure of considerable time for study and without the examination of a moderately complete collection of authentic material. As neither time nor material is at present available, the specimens (U. S. N. M., Helm. Coll. No. 26205) are left with generic identification only.

